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REMARKS

Applicants request review and reconsideration of the non-final Office Action mailed March 10, 2008 (hereinafter "Office Action") in view of the above amendments to the claims and the following remarks. At the time of the Office Action, claims 1-5 and 7-21 were pending. All claims were rejected under 35 U.S.C. §103(a). By this Amendment, claims 1, 4, 5 and 7-11 are amended and claims 22 and 23 are added.

The Commissioner is hereby authorized to charge the $460 fee for a retroactive two-month extension of time and the $100 fee for two dependent claims in excess of twenty to Deposit Account No. 50-0951. Although no additional fees are believed due, the Commissioner is hereby authorized to charge any deficiency or credit any surplus to Deposit Account No. 50-0951. The amendments and rejections are now addressed in more details.

Amendments to the Claims

By this Amendment claims 1, 4 and 7-11 have been amended. Claims 4, 7, 8, 10 and 11 are amended to clarify that the Kull value is less than 1. In addition, claims 1, 4 and 7-9 are amended to recite that the mixture of 1,2-alkanediols "consist[s] of two or more straight chain 1,2-alkanediols having ~~the~~ chain lengths of which (i) are different and (ii) ~~in each case~~ are in the range of 5 to 10 C atoms" and that this mixture of 1,2-alkanediols has a Kull value less than 1, *i.e.*, exhibits a synergistic antimicrobial effect. Thus, the claimed synergy exhibited by the mixture of 1,2-alkanediols is not disclosed by the synergy of a 1,2-alkanediol with a compound that is not a straight 1,2-alkanediol with 5 to 10 carbon atoms.

By this amendment, claim 5 is amended to recite that each 1,2-alkanediol comprises 20-80% (m/m) by mass of the mixture of 1,2-alknadediols. Support for the subject matter of this amendment can be found throughout the specification, including but not limited to, paragraph [0023].

By this amendment, new claims 22 and 23 are added and are drawn to antimicrobial compounds that contain specific amounts of the mixture of 1,2-alkanediols. Support for the subject matter of this amendment can be found throughout the specification, including but not limited to, paragraph [0036].

No new matter is added.

Claim Rejections – 35 U.S.C. § 103(a)

In the Office Action, claims 1-5, 7 and 9-21 were rejected under 35 U.S.C. § 103(a) as being obvious over U.S. Patent Application Publication No. 2001/0036964 by Clarkson, *et al.* (hereinafter "Clarkson") in view of U.S. Patent No. 5,670,160 issued to Eggensperger *et al.* (hereinafter "Eggensperger"), U.S. Patent Application Publication No. 2003/0100613 by Riebel *et al.* (hereinafter "Riebel"), and U.S. Patent Application Publication No. 2002/00998211 by Cupferman *et al.* (hereinafter "Cupferman").

The amended claims are drawn to compositions containing a mixture of straight chain 1,2-alkanediols with 5 to 10 carbons that exhibit an antimicrobial effect characterized by a Kull value of less than 1. For example, amended claim 1 recites:

> 1. (currently amended) An antimicrobial composition, comprising an antimicrobial effective amount of a mixture of ~~two, three or more straight-chain~~ 1,2-alkanediols [[,]] consisting of two or more straight chain 1,2-alkanediols having ~~the~~ chain lengths that ~~of which~~ (i) are different and (ii) ~~in each case~~ are in the range of 5 to 10 C atoms, wherein said mixture of 1,2 alkandiols exhibits an antimicrobial effect characterized by ~~effective amount is that amount which results in~~ a Kull value of less than 1 ~~for the antimicrobial effect exhibited by said mixture of 1,2-alkanediols~~.

The claim has been amended to clarify that the phrase "mixture of 1,2-alkanediols" refers only to straight chain 1,2-alkanediols that are (i) different, and (ii) in the range of 5 to 10 carbons long. The claims clearly state that the mixture of 1,2-alkanediols, which has been

defined to exclude the preservatives or other biocides, exhibits an antimicrobial effect characterize by a Kull value of less than 1. In other words, the mixture of 1,2-alkanediols exhibits a synergy when compared to the individual 1,2-alkanediols that constitute the mixture, which is limited to 1,2-alkanediols.

According to the Office Action, Clarkson discloses individual 1,2-alkanediols, but fails to disclose "a composition comprising the particular combination of alkyldiols [claimed] herein or the specific preservatives such a 1,2-dibromo-2,4-dicyanobutane, 2-phenoxyethanol, and 3-iodo-2-propinyl-butyl carbamate." The Office Action asserts that the combination of Eggensperger and Riebel disclose each of the three specific preservatives. It is asserted that Cupferman discloses a composition with a synergistic antimicrobial action that contains at least one polyol in combination with 2-hydroxy-4-(1-methylethyl)cyclohepta-2,4,6-trien-1-one or sodium capryl lactyl lactylate.

As explained by the Declaration of Co-Inventor Dr. Gerhard Schmaus under 37 C.F.R. §1.132 (hereinafter "Schmaus Declaration"):

> It is well known that the fields of chemistry and biology are unpredictable arts. The current invention deals with an unexpected results, *i.e.*, synergistic antimicrobial activity, that is the result of chemical interactions with a biological organism. To this day, me and my colleagues have not identified the mechanism that causes the synergistic antimicrobial efficacy of the claimed mixtures of 1,2-alkanediols. ***Thus, even in hindsight, more than six and a half years after the filing of the German priority application (DE102 06 759.7. filed 02-19-2002), the claimed result is still not explained and could not be predicted using a model.***
>
> Of the four references cited in the rejection of claims 1-5, 7 and 9-21, only one of the references, Cupferman, even arguably discloses a synergistic antimicrobial effect for any mixture of compounds. Thus, the only reference that could possibly disclose or suggest the claimed synergistic antimicrobial effect is Cupferman.

> Synergy in the biological and chemical arts is very valuable because many chemicals used in these areas are very expensive ingredients. Thus, extensive research is conducted to identify synergistic combinations that can reduce the amounts of such ingredients that must be added while achieving a desired antimicrobial effect. Even with all of this research, it is difficult to determine where a synergistic antimicrobial effect may arise, because the mechanism behind the synergy of chemicals as they interact with biological organisms or constituents are poorly understood.

Schmaus Declaration, section 4.

With respect to the synergistic results of the claimed mixture, *In re Chupp*, 816 F.2d 643 (Fed. Cir. 1987) is particularly relevant. In *In re Chupp*, The Federal Circuit held that evidence that a compound or composition possesses superior and unexpected properties in one of a spectrum of common properties can be sufficient to rebut a *prima facie* case of obviousness, *see In re Chupp*, 816 F.2d 643, 646 (Fed. Cir. 1987); MPEP 2145.

In *In re Chupp*, the claims at issue were drawn to a compound for use as a selective herbicide with unexpectedly superior herbicidal efficacy for soybeans and corn, but average herbicidal results for other crops, *see id.* at 644. The prior art was a homolog of the claimed compound that differed from the claimed compound by a single methylene group (C=C), and was disclosed as being a selective herbicide for crops generally. Thus, the difference between the claimed compound and the prior art was a single methylene group and an unexpected improvement in herbicidal efficacy that was limited to two crops.

The Court noted that the claimed compound's "superior activity in corn and soybeans is a new and unexpected property," *In re Chupp*, 816 F.2d at 645. The Commissioner argued that the claimed compound was similar to the prior art and provided average selective herbicidal activity for many crops and poor herbicidal activity for others. ***The Federal Circuit responded to this argument by concluding that the fact that a compound or composition possesses superior and unexpected properties in one of a spectrum of***

common properties was sufficient to rebut a prima facie case of obviousness, *see id.* at 646.

In the instant case, the cited references might disclose an undefined synergistic antimicrobial activity exhibited by a mixture of a 1,2-alkanediol with 2-hydroxy-4-(1-methylethyl)cyclohepta-2,4,6-trien-1-one, sodium capryl lactyl lactylate or glyceryl poly(meth)acrylate ("synergistic substituents"); however, it would not be obvious that a synergistic antimicrobial effect would be achieved by substituting any of these synergistic substituents with a second 1,2-alkanediol that is dissimilar from the synergistic substituents. This is apparent from the fact that none of the cited references attempt to generalize the class of compounds that can produce a synergistic effect.

As explained by Dr. Schmaus, even though it is extremely difficult to predict where a synergy may occur at the intersection of the chemical and biological arts:

> [i]t is sometimes possible to guess that where there is a synergy between two molecules, another molecule closely related to one of the molecules (*such as an isomer or stereoisomer*) may be substituted to produce a similar synergistic effect. With that in mind, we can consider 2-hydroxy-4-(1-methylethyl)cyclohepta-2,4,6-trien-1-one and sodium capryl lactyl lactylate, which Cupferman discloses as producing a synergistic antimicrobial effect when combined with 1,2-alkanediols.
>
> 2-hydroxy-4-(1-methylethyl)cyclohepta-2,4,6-trien-1-one is an aromatic seven carbon ring formed from three double bonds and a ketone group. ***There is simply nothing in the biological or chemical arts that would suggest that 2-hydroxy-4-(1-methylethyl)cyclohepta-2,4,6-trien-1-one and a first straight chain 1,2-alkanediol with 5 to 10 carbon atoms would behave similarly with respect to producing a synergistic antimicrobial effect when combined with a second straight chain 1,2-alkanediol with 5 to 10 carbon atoms.*** Thus, there is no reason to expect that a synergistic antimicrobial effect would be produced when the 2-hydroxy-4-(1-methylethyl)cyclohepta-2,4,6-trien-1-one in Cupferman is substituted with a 5 to 10 carbon straight chain 1,2-alkandiol.
>
> Sodium capryl lactyl lactylate is the sodium salt of the caprylic ester of lactyl lactate. ***There is simply nothing in the biological or chemical arts that would suggest that Sodium capryl lactyl lactylate and a straight***

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> ***chain 1,2-alkanediol with 5 to 10 carbon atoms would behave similarly with respect to producing a synergistic antimicrobial effect when combined with a different straight chain 1,2-alkanediol with 5 to 10 carbon atoms.*** Thus, there is no reason to expect that a synergistic antimicrobial effect would be produced when the sodium capryl lactyl lactylate in Cupferman is substituted with a 5 to 10 carbon straight chain 1,2-alkanediol.
>
> It is highly noteworthy that Cupferman was seeking to identify a synergistic antimicrobial effect using 1,2-alkanediols, but did not discover that specific mixtures of 1,2-alkanediols, such as those claimed, produce a synergistic antimicrobial effect. However, perhaps the strongest evidence against the attempt to make the substitution required to support the Examiner's assertion of obviousness is that none of the references attempt to generalize a class of compounds that will exhibit a synergy when combined with a 1,2-alkanediol. ***Clearly, if the claimed invention were obvious, and substitutions producing synergies simple, Cupferman would have identified that a mixture of at least two different straight chain 1,2-alkandiols with 5 to 10 carbon atoms exhibited a synergistic antimicrobial effect.***

Schmaus Declaration, section 4.

The remaining references are only tangentially related to the claimed subject matter. The Office Action asserts that Clarkson discloses individual 1,2-alkanediols, but fails to disclose "a composition comprising the particular combination of alkyldiols [claimed] herein or the specific preservatives such a 1,2-dibromo-2,4-dicyanobutane, 2-phenoxyethanol, and 3-iodo-2-propinyl-butyl carbamate." Thus, Clarkson merely stands for the proposition that 1,2-alkanediols can be mixed with other ingredients. This does nothing to disclose or suggest the claimed synergistic antimicrobial action produced by the mixture of two different straight chain 1,2-alkanediols with 5 to 10 carbons. Each of these statements is supported by Dr. Schmaus' Declaration, *see* Schmaus Declaration, section 4.

The Office Action asserts that the combination of Eggensperger and Riebel disclose each of the three specific preservatives. As explained by Dr. Schmaus, each of these

references "merely discloses that these ingredients exist, but does nothing to disclose or suggest using them in combination with the claimed mixture of two different straight chain 1,2-alkanediols with 5 to 10 carbons where the mixture of 1,2-alkanediols exhibits a synergistic antimicrobial action." Schmaus Declaration, section 4.

In conclusion Dr. Schmaus states:

> ***For the reasons outlined above, the only possible conclusion is that nothing present in Cupferman or any other cited reference, whether alone or in combination, would disclose or suggest that the claimed mixture of 1,2-alkanediols would exhibit a synergistic antimicrobial effect as established by Kull values.*** Accordingly, the combination of Clarkson, Eggensperger, Riebel, and Cupferman fails to establish that the subject matter of the claims is obvious.

Schmaus Declaration, section 4.

Turning, now to other issues raised by the rejection or the Response to Arguments section of the Office Action. It appears that the Examiner is arguing that the synergistic antimicrobial effect is merely an intended use, *see* Office Action, page 5, 2nd full paragraph. Applicants contend that the claimed synergistic antimicrobial effect is an intrinsic property of the claimed mixtures of 1,2-alkanediols. The Examiner's assertion is diametrically opposed to a large body of well established case law. In fact, one need look no further than *In re Chupp* to confirm this. The claims at issue in *In re Chupp* were drawn to a single compound N-(ethoxy*methyl*)-2'-trifluoromethyl-6'-methyl-2-chloroacetanilide that exhibited superior selective herbicidal activity. The Court held that, because of the unexpectedly superior herbicidal activity against two crops, the claim for the compound N-(ethoxy*methyl*)-2'-trifluoromethyl-6'-methyl-2-chloroacetanilide was drawn to allowable subject matter. Thus, the Federal Circuit relied on an intrinsic property of N-(ethoxy*methyl*)-2'-trifluoromethyl-6'-methyl-2-chloroacetanilide to hold that a composition claim was drawn to allowable subject matter. Clearly, any assertion that the synergistic antimicrobial effect of the claimed

mixtures of 1,2-alkanediols is merely an intended use that is not entitled to patentable weight cannot stand in view of *In re Chupp*.

The Examiner cites *In re Spada*, 911 F.2d 705, 709 (Fed. Cir. 1990) for the assertion that "A chemical composition and its properties are inseparable. Therefore, if the prior art teaches the identical chemical structure, the disclosed properties are necessarily present." *See* Office Action, page 6. The Office Action then states that the "burden is shifted to the applicant to show that the *prior art product* does not inherently possess the same properties as the ***instantly claimed product***," *see id.* (emphasis added).

Applicants respectfully assert that the Examiner's assertion of inherency using *In re Spada* is inappropriate in the current context, because the claimed product is not disclosed in the prior art, only by the combination of multiple references used to form an obviousness rejection. In particular, Applicants respectfully assert that the rationale of *In re Spada* does not apply to the instant rejection because the instant rejection is an obviousness rejection, not an anticipation rejection. In this case, there is nothing in any of the cited references that discloses the claimed mixture of 1,2-alkanediols (where inherency could be applicable), or that the claimed mixture of 1,2-alkanediols would have a synergistic antimicrobial effect as demonstrated by a Kull value less than 1 (which prevents a conclusion of obviousness), *see* Schmaus Declaration, Sections 4-6.

In *In re Spada*, applicant Spada claimed a product, a pressure sensitive adhesive composition comprising a water-based latex comprising a normally tacky polymer with a T_g of 0°C or less, wherein the polymer included specific amounts of two classes of monomers, *see In re Spada*, 911 F.2d at 706-07. A third class of monomer was included in preferred embodiments, *see id.* at 707.

The examiner cited the Smith patent against the Spada application as part of a rejection under 35 U.S.C. §102, §103, *see id.* Like the Spada claims, Smith disclosed a

product, a water-based latex comprising polymers used as binding agents, *see id.* The polymers disclosed in Smith included the claimed amounts of the two classes of monomers, as well as the preferred amount of the third monomer, *see id.* In addition, "Spada incorporated by reference the entire disclosure of the Smith patent, as showing polymerizable functional monomers suitable and preferred for use in the Spada polymers, and the preparation of these monomers," *see id.* The Board sustained the Examiner's rejection under 35 U.S.C. §102, §103, *see id.*

In the relevant portion of the decision, ***the Federal Circuit analyzed the rejection as an anticipation rejection***, because the end products disclosed in Smith were identical to the subject matter of the Smith claims, *see id.* at 707-08. The Federal Circuit approved of the Board's conclusion that "the polymerization by both Smith and Spada of identical monomers, employing the same or similar polymerization techniques, would ***produce polymers having the identical composition***," *see id.* at 708. The Federal Circuit concluded that it was proper to conclude that the Spada claims ***lacked novelty*** because of the "virtual identity of monomers and procedures [for making the polymers]," *see id.*, and sustained the rejection because Spada was unable to demonstrate that the conclusion that the products were the same, *see id.* at 709.

Applicants contend that *In re Spada* is relevant to anticipation rejections, but irrelevant to the obviousness rejection at issue in the Office Action. This is further supported by *In re Rijckaert*, 9 F.2d 1531, 1534 (Fed. Cir. 1993), where the Federal Circuit stated that "Obviousness cannot be predicated on what is not known at the time an invention is made, even if the inherency of a certain feature is later established," *see*. *See* MPEP 2141.02.V. Because the instant rejection is based on obviousness, the *In re Spada* rationale does not apply. The clear distinction is that the *In re Spada* anticipation reference disclosed every step and ingredient necessary to produce the claimed subject matter, *i.e.*, the claimed subject

matter was already disclosed. In contrast, the instant rejection is based on a mixture that was never disclosed by any prior art reference. Quite simply, the arguments in the Office Action are based on a misinterpretation of *In re Spada*, which flies in the face of both *In re Rijckaert* and *In re Spada*.

In the Office Action, the Examiner asserts that the unexpected results provided in the Specification do not overcome the obviousness rejection. The Examiner asserts that:

> the results in the specification are not commensurate with the scope of the instant claims. It is noted that the instant claims do not recite any limitation on the amounts of the 1,2-alkanediols. Applicant's specification only show[s] data for the following amounts: 0.25%, 0.5%, 1%, 2% and 3% for the disclosed 1,2-alkandiols. This is not enough to support the entire range of up to 100% as claimed.

Office Action, page 8.

As explained by Dr. Schmaus, the Examiner's position:

> demonstrates a clear misunderstanding of the claims, which the current amendment should clarify. The Kull value calculation is based on the minimum inhibitory concentration (MIC), which is dependent on the ***ratio*** of the various 1,2-alkanediols in the mixture of 1,2-alkanediols. However, the MIC is independent of the ***amount*** of 1,2-alkanediol mixture in the composition. Thus, the objection to the data found in the Office Action is simply not relevant to the claimed subject matter.
>
> The methodology used to determine the MIC value of individual 1,2-alkanediols and mixtures of 1,2-alkanediols can be found in the specification, *see* paragraphs [0101]-[0118]. In addition, the equation used to calculate the Kull value can be found in Table 4, *see* Specification, p. 33.
>
> When the mixture of 1,2-alkanediols is added to an antimicrobial composition, the amount added does not impact the Kull value, which is determined based on the ratio of the 1,2-alkanediols. This derivation of Kull value is a measure of synergy that is well accepted by those of ordinary skill in the art of antimicrobial sciences. Furthermore, a person of ordinary skill in the art would not add more than the MIC for the target

microbe because adding more than this amount would increase costs and could raise issues with safety. Accordingly, the Examiner's objection to Applicant's data is unfounded.

Schmaus Declaration, section 6.

In view of the amendments to the claims and the above explanation, Applicants respectfully request that the Examiner reconsider this objection to the data of unexpected results based on the assertion that the unexpected results are not commensurate in scope with the claims.

In addition, Applicants respectfully submit that the range where a synergy occurs can be easily identified by a person of ordinary skill of the art using the procedure set forth in the specification, *see* Specifications, paragraphs [0101]-[0118]. In order to demonstrate this, Dr. Schmaus conducted experiments to demonstrate that the synergistic antimicrobial effect of exhibited by a mixture of 1,2-hexanediol (C6), 1,2-octanediol (C8) does not occur using every ratio of these compounds, *see* Schmaus Declaration, section 7.

Using the procedures set forth in the specification, Dr. Schmaus determined the Kull value for several ratios of 1,2-Hexanediol (C6), 1,2-octanediol (C8). This data is reproduced below:

Sample: 1,2-hexanediol (C6), 1,2-octanediol (C8) and mixtures thereof	MIC (Minimum Inhibiting Concentration) *Staphylococcus aureus* (ATCC 6538)	Synergy index according to Kull's equation *Staphylococcus aureus* (ATCC 6538)
C6	12500 ppm	Not applicable
C8	3125 ppm	Not applicable
C6 : C8 (1 : 1)	3125 ppm	0.625
C6 : C8 (4 : 1)	6250 ppm	0.800

Sample: 1,2-hexanediol (C6), 1,2-octanediol (C8) and mixtures thereof	MIC (Minimum Inhibiting Concentration) *Staphylococcus aureus* (ATCC 6538)	Synergy index according to Kull's equation *Staphylococcus aureus* (ATCC 6538)
C6 : C8 (1 : 4)	3125 ppm	0.850
C6 : C8 (10 : 1)	12500 ppm	1.300
C6 : C8 (50 : 1)	12500 ppm	1.060

SI <1 corresponds to a synergistic activity

SI = 1 corresponds neither to a synergistic nor to an antagonistic activity

SI >1 corresponds to an antagonistic activity

Schmaus Declaration, section 7.

As explained by Dr. Schmaus:

> The results indicated in table 2 show by way of example a synergistic intensification of the activity of mixtures of 1,2-hexanediol and 1,2-octanediol in ratios of 4:1, 1:1 and 1:4. In these cases, Kull values <1 were calculated indicating synergy. In contrast, in the case of the 10:1 and 50:1 ratios, calculated Kull values were ≥1 indicating no synergism.

Schmaus Declaration, section 7.

In his concluding remarks, Dr. Schmaus summarizes his opinion on the instant rejections as follows:

> The synergy of mixtures of 1,2-alkanediols is an unexpected result that was neither disclosed nor suggested by the cited references, whether alone or in combination. The chemical and biological arts are two of the most unpredictable arts. Thus, the fact that a reference discloses an antibacterial synergy between a first 1,2-alkanediol and 2-hydroxy-4-(1-methylethyl)cyclohepta-2,4,6-trien-1-one or sodium capryl lactyl lactylate or glyceryl poly(meth)acrylate, does not have any bearing on whether a mixture of the first 1,2-alkanediol and a second 1,2-alkanediol will produce

> a similar antibacterial synergy. The structures of 2-hydroxy-4-(1-methylethyl)cyclohepta-2,4,6-trien-1-one, sodium capryl lactyl lactylate and glyceryl poly(meth)acrylate, are simply too different from the claimed 1,2-alkanediols to assume that a second 1,2-alkanediol would interact with the first 1,2-alkanediol and target microbes to produce the same antimicrobial effect (*i.e.*, a synergy). Accordingly, it is my opinion that there is nothing in any of the cited references, whether alone or in combination, that discloses or suggests that the claimed mixture of 1,2-alkanediols would exhibit the claimed synergistic antimicrobial effect as demonstrated by the Kull value.
>
> For the reasons noted above, the claimed antimicrobial compositions are neither anticipated nor rendered obvious by the cited references. In my opinion, the claimed antimicrobial mixtures, which contain the synergistic mixture of 1,2-alkanediols, are quite distinct from any of the cited references and cannot be considered to be known, expected, or suggested based on their respective teachings.

Schmaus Declaration, section 8.

For at least the reasons set forth above, Applicants respectfully submit that the cited references fail to establish a *prima facie* case of obviousness and that the evidence of unexpected results rebuts a *prima facie* case of obviousness, if one were established. Accordingly, Applicants respectfully request that the rejection based Clarkson, Eggensperger, Riebel and Cupferman be withdrawn.

In the Office Action, claim 8 is rejected under 35 U.S.C. 103(a) as being obvious over French Patent No. 2 747 572 issued to Greff (hereinafter "Greff"). The Office Action asserts that Greff is directed to a composition consisting of two or more straight chain 1,2-alkanediols, wherein the chain length is different and in the range of 5 to 10 carbon atoms. The Office Action acknowledges that "Greff fail[s] to disclose a specific combination of two alkane-diols with a linear chain between 5 to 10 carbons."

Similar to the discussion of Clarkson, Eggensperger, Riebel, and Cupferman found above, there is simply nothing in Greff that discloses or suggests that the use of two different straight chain 1,2-alkanediols with 5 to 10 carbons would exhibit a synergistic effect. Claim 3 of Greff is drawn to the compositions of claims 1 and 2 further comprising glyceryl poly(meth)acrylate. A review of claims 1 and 2 indicates that they recite "the alkane-diol is octane-1,2-diol." Thus, claim 3 discloses that a mixture of a linear or branched alkanediol, preferable octane-1,2-diol, and glyceryl poly(meth)acrylate produces an unmeasured synergistic local antimicrobial effect of two mechanisms (presumably the two compounds).

As explained by Dr. Schmaus:

> There is nothing structurally similar (*e.g.*, isomer, stereoisomer, etc.) about a straight chain 1,2-alkanediol with 5 to 10 carbons and glyceryl poly(meth)acrylate to suggest that there would be a synergy between two 1,2-alkanediols. ***Specifically, there is simply nothing in the biological or chemical arts that would suggest that glyceryl poly(meth)acrylate and a straight chain 1,2-alkanediol with 5 to 10 carbon atoms would behave similarly with respect to producing a synergistic antimicrobial effect when combined with a different straight chain 1,2-alkanediol with 5 to 10 carbon atoms.*** Thus, there is no reason to expect that a synergistic antimicrobial effect would be produced when the glyceryl poly(meth)acrylate in Greff is substituted with a 5 to 10 carbon straight chain 1,2-alkandiol.
>
> Clearly, if there were such a suggestion, Greff, who was looking for synergies, would have sought patent protection for it. For the reasons outlined above, it is clear that there is nothing present in Greff of any other cited reference, whether alone or in combination, that would disclose or suggest the claimed mixture of 1,2-alkanediols would exhibit a synergistic antimicrobial effect as established by Kull values.

Schmaus Declaration, section 5.

For at least the reasons set forth above, Applicants respectfully submit that the cited references fail to establish a prima facie case of obviousness and that the evidence of

unexpected results rebuts a prima facie case of obviousness, if one were established. Accordingly, Applicants respectfully request that the rejection based Greff be withdrawn.

Conclusion

For at least the reasons set forth above, the independent claims are believed to be allowable. In addition, the dependent claims are believed to be allowable due to their dependence on an allowable base claim and for further features recited therein. The application is believed to be in condition for immediate allowance. If any issues remain outstanding, Applicant invites the Examiner to call the undersigned Greg Lefkowitz (direct line 561-671-3624) if it is believed that a telephone interview would expedite the prosecution of the application to an allowance.

Respectfully submitted,

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